

CLAIMS

What is claimed is:

1. A feeder/sePARATOR apparatus for separating and moving sheets from a stack of sheets comprising:

an input area for positioning the stack of sheets;

a first and second series of rollers for jointly feeding a sheet on the bottom of the stack into an area of the apparatus including a third and fourth series of rollers and a first series of belts;

a pre-separation brake adapted to act in a pivoting pattern on the first series of belts only, to thereby cause a first stage separation of the bottom sheet;

a separation brake adapted to act in a linear pattern on the fourth series of rollers only, to thereby cause a second stage separation of the bottom sheet, the pre-separation and separation brakes permitting the bottom sheets to be separated from the stack; and

a fifth series of rollers and a second series of belts both being adapted to feed the bottom sheets

away from the feeder/separator apparatus in a sheet feed path.

2. A feeder/separator apparatus in accordance with claim 1 wherein said sheets are mailpieces.

3. A feeder/separator apparatus in accordance with claim 1 wherein said sheets are envelopes.

4. A feeder/separator apparatus in accordance with claim 3 wherein said apparatus automatically adjusts to envelope thickness.

5. A feeder/separator apparatus in accordance with claim 3 wherein said envelopes are of mixed thickness and sizes.

6. A feeder/separator apparatus in accordance with claim 3 wherein said envelopes are being fed to a postage meter.

7. A feeder/separator apparatus in accordance with claim 1 wherein said feeder/separator apparatus is in a single modular unit for a modular mailing machine.

8. A feeder/separator apparatus in accordance with claim 6 wherein said apparatus includes a moistener

4000 E 20th St, Suite 200, Seattle, WA 98103

positioned within said apparatus for moistening a glue area on a flap of said envelopes.

9. A feeder/sePARATOR apparatus for separating and moving sheets from a stack of envelopes, the apparatus being adapted to adjust to envelope thickness comprising:

an input area for positioning the stack of envelopes;

a first and second series of rollers for jointly feeding an envelope on the bottom of the stack into an area of the apparatus including a third and fourth series of rollers and a first series of belts;

a pre-separation brake adapted to act in a pivoting pattern on the first series of belts only to cause a first stage separation of the bottom envelope;

a separation brake adapted to act in a linear pattern only on the fourth series of rollers to cause a second stage separation of the bottom envelope, the pre-separation and separation brakes permitting the bottom envelopes to be separated from the stack; and

a fifth series of rollers and a second series of belts both being adapted to feed the bottom envelopes away from the feeder/sePARATOR apparatus in an envelope feed path.

10. A feeder/sePARATOR apparatus in accordance with claim 9 further comprising a plurality of sensors adapted to control the starting and stopping of movement of various sets of said rollers and said belts in direct relation to the arrival or non-arrival of a leading edge of an envelope.

11. A feeder/sePARATOR apparatus in accordance with claim 9 further comprising a pre-separation sensor adapted to sense the leading edge of an envelope at a starting position in said apparatus.

12. A feeder/sePARATOR apparatus in accordance with claim 9 further comprising a sensor adapted to determine when there are envelopes in the stack of envelopes to be fed.

13. A feeder/sePARATOR apparatus in accordance with claim 9 further comprising a sensor adapted to sense long envelopes and override the short letter control parameters that the different series of rollers/belts are turned on for.

14. A feeder/sePARATOR apparatus in accordance with claim 9 further comprising a sensor adapted to sense that a leading edge of an envelope being separated traveled through said pre-separation and separation brakes within

a predetermined time without a jam and that said envelope being separated is about to be picked up by the fifth series of rollers.

15. A feeder/separator apparatus in accordance with claim 9 further comprising an output sensor adapted to sense that the leading edge of the envelope being separated has passed through said apparatus and that nothing in said apparatus will stop said envelope past this sensor.

10054118-2021022